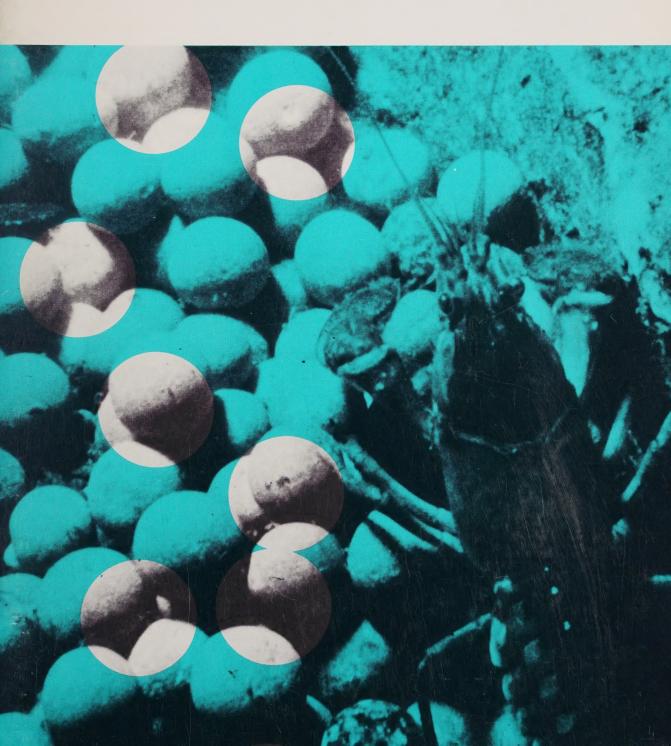
# ROTUNDA the bulletin of The Royal Ontario Museum





## ROTUNDA

the bulletin of The Royal Ontario Museum

Volume 2, Number 2 Spring 1969

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The public is invited to join the Royal Ontario Museum and share in its activities. Membership includes free subscription to ROTUNDA; invitations to previews of exhibitions and new galleries; free admission to lectures and certain other activities; ten per cent reduction at Sales Desk; advance information on coming events. Annual Membership is \$15, Family Membership \$25, Life Membership \$200. For further information write: Membership Secretary, Royal Ontario Museum, 100 Queen's Park, Toronto 5, Ontario, or telephone 928-3704.

The Cover:

Crayfish and musket balls. See *Our Submerged Archives*, page 4.

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P. C. Swann, Managing Editor; Bruce Easson, Editor; Beverley Slopen, Associate Editor; Olive Koyama, Associate Editor; Ursula Young, Editorial Assistant; Leighton Warren, Chief Photographer; Marie Hands, Designer.

Second class mail registration number 1531



Carved wooden head covered with metal, made by Bini of West Africa

Brilliant headdresses, grotesque masks, intricately carved clubs, all these and much more are in the major exhibition, ARTS OF FORGOTTEN PEOPLES. At the Museum April 22 to June 22, it graphically illustrates the material

cultures of the Eskimos, North, Central and South American Indians, the Negroes of Africa and the indigenous inhabitants of Pacific

Oceania.

The exhibition is divided into three major sections: regular activities, social activities, and religious activities. In the first section are household utensils, hunting equipment, housing and other requirements for daily life. In the second are numerous weapons, from spears and clubs to bows and arrows, and musical instruments. The third section contains masks and other paraphernalia used by the different culture

## **Spotlight**

## Comments on current and future ROM activities

groups in their religious ceremonies.

All the diverse material in the show has been drawn from the ROM Ethnology Department's enormous collection of approximately 70,000 objects representing the major indigenous cultures of the world. Dr. E. S. Rogers, Curator of the Department, says the exhibition is in the "ethnographic present;" that is, from the time of the first encounter with Europeans to the present.

Much of the material rarely if ever has been publicly shown before and organizing the exhibition posed considerable headaches. Since preparations began 18 months ago, the Ethnology Department staff has spent much of its time identifying and describing the objects because of the lack of documentary information.

Dr. Rogers also has written a handbook, FORGOTTEN PEOPLES. All the 180 objects illustrated in it also are in the exhibition. But the handbook is a permanent guide to the Ethnology Department collection and a reference on the world's important indigenous cultures. During the exhibition the handbook contains a printed catalogue of all objects in the show. (Also see *Publications* section.)

North Pacific Coast Indians stunned hooked halibut with elaborately carved club

From Papuan Gulf of New Guinea came this mask

Carved wooden adze with stone blade represented god of carpenters in Polynesia







Guided tours of the exhibition will be offered Monday to Friday at 2 p.m. and 3 p.m. by women of the Members' Committee. These 45-minute tours are free and together with the handbook will make the exhibition that much more enjoyable.

Three new, semi-permanent exhibits have been opened in the north wing of the Sigmund Samuel Canadiana Building. They are devoted to early Canadian glass, early silver and to archaeological investigations of 19th century industrial sites. These exhibit areas, combined with the six period room settings opened earlier, complete renovation of the Canadiana Building North Gallery.

The glass exhibition indicates the range of Canadian glass producers from 1839 to 1920; from free-blown Mallorytown products to pressed bottles and unique whimsies.

In the silver exhibit are pieces on loan from the Henry Birks collection and from John E. Langdon of Toronto as well as from the ROM's own collections. This display shows the work of 17th and 19th century Canadian silversmiths for ecclesiastical and domestic use as well as Indian trade silver.

Recent excavations by the Canadiana Department in the field of industrial archaeology are described in the third exhibit. It includes artifacts recovered from three 19th century Ontario pottery sites and from Normandale, the location of the earliest iron foundry in what was then Upper Canada.

Early in June the large main floor gallery containing three monumental Chinese wall paintings and familiarly known as the Fresco Gallery acquires a new name. It will be dedicated at a tea as the Bishop White Gallery in memory of William Charles White, D.D., F.R.S.C., sometime Anglican Bishop of Honan, China. In 1924 he first offered to help the Royal Ontario Museum acquire some of the rare archaeological material then appearing on the market in his diocese from newly discovered tombs at An-yang and Lo-yang.

In 1934 he retired from his bishopric and became the ROM's first Keeper of the East Asiatic Collection. Among his spectacular acquisitions for the Museum were the temple decorations from Shansi province and a group of related sculptures. His study of these, CHINESE TEMPLE FRESCOES, published in 1940, served as a basic reference on the subject for

some years. By the time Bishop White retired in 1947, he had published three books in Museum series, a monograph on Chinese Jews and numerous articles relating to objects in the collection. He died in 1960 at the age of 77. For the dedication, the Gallery is being refurbished and a GUIDE TO THE FRESCOES is being published, describing their contents. Income from the GUIDE will go to the Bishop White Memorial Fund for further acquisitions for the collection.

Early in January a large wooden chest was put in the Museum's Main Rotunda to receive donations from the public.

After one weekend, when attendance had been particularly heavy, Peter Swann, the Director, was surprised to discover that the meagre contents of the "poor box" were missing.

When the story got around, many individuals and private groups quickly responded to replace the loss many times over. But we particularly liked the contribution from grade two, room eight, at Humewood School, Toronto. In a neatly printed letter, the youngsters said:

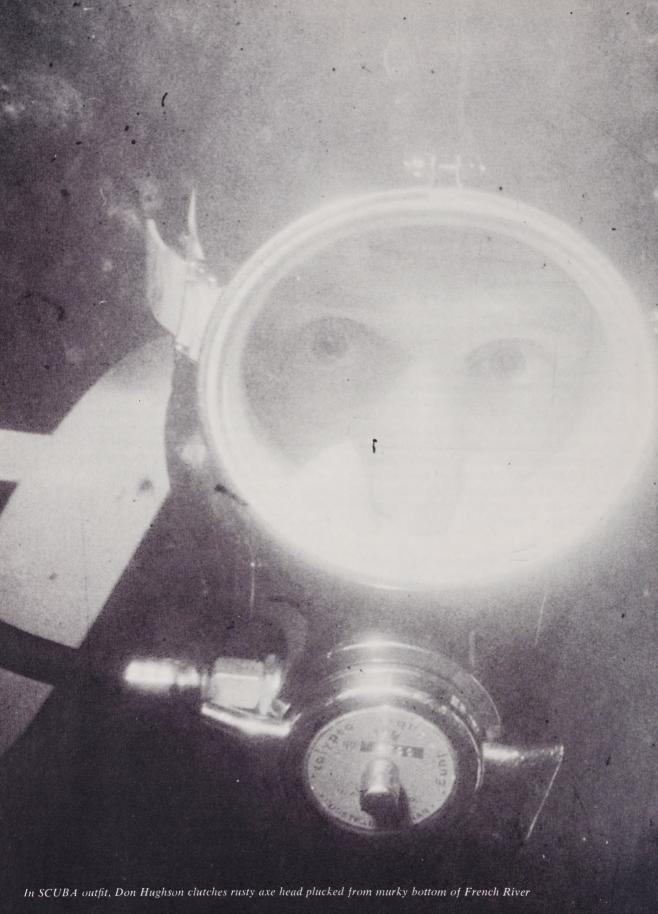
"Dear Mr. Swann.

We liked your museum. along time ago we heard that someone stole your money. So we made a popcorn sale because we wanted you to have money for your museum. We liked the Dinosaur bones best."

Enclosed was a cheque for \$4.18.

Camel saddle from Sahara is among more than 500 items in exhibition





# our submerged archives

## by Walter Kenyon

Associate Curator,
Office of the Chief Archaeologist

Photographs by Ario Gatti.

For several years now, the Office of the Chief Archaeologist has been engaged in an underwater search of the old canoe route to the west—the Voyageurs' Highway. The purpose of the search is to locate and study those objects of European manufacture which the fur-traders lost from time to time when their canoes upset in the rapids.

Stated in these bald terms, the operation sounds quite simple. It sounds, in fact, like Michelangelo's explanation of how one sculptures. You simply visualize a "form" in a block of marble, chip away the superfluous stone, and there stands a masterpiece! I have suspected for some time that the process is actually a bit more complicated than that; and I have learned through experience that an underwater search along the Voyageurs' Highway can be both difficult and expensive.

The Voyageurs' Highway, the main thoroughfare of the Montreal fur-traders, is an incredible system of lakes and rivers which stretches from

Map shows interconnecting waters that enabled voyageurs to paddle from Montreal west and north to collect furs



Lachine, on the St. Lawrence River, to Fort Chipewyan on Lake Athabasca. And this is just the main line, from which branch lines led to the Arctic and Pacific Oceans, James and Hudson Bay and the Gulf of Mexico. It is literally possible for me to put a canoe in Toronto Harbour and paddle with relative ease to any of those places. In fact, one of the longer portages would be the first, from the Museum, at Bloor St. and Avenue Rd., to the waterfront.

It was the presence of this network of waterways that made possible the relatively early exploration of Western Canada.

Even with the Voyageurs' Highway, however, the traders out of Montreal and Lachine faced formidable logistic problems. How, for example, was it possible to move tons of European manufactured goods from Lachine to Lake Athabasca, and to return with the winter's catch of furs, in one season? Between break-up in the spring and freeze-up in the fall, the canoe-route is ice-free for some five months. And a round trip from Lachine to Lake Athabasca, with the heavy loads they were carrying, would have taken about eight months.

Briefly (for we must get back to our diving), the Montreal traders solved the problem as follows. Trade-goods were assembled at Lachine, and packed in 90 lb. bales called "pièces". These were loaded into large Montreal canoes, each of which was paddled by ten or twelve voyageurs, and carried up to three tons of freight. Brigades of these canoes would head up the St. Lawrence as soon as the ice went out, usually early in May. Following the Ottawa, Mattawa and French Rivers, they entered Georgian Bay and, coasting along its north shore, arrived at Sault Ste Marie where they entered Lake Superior. There they turned north and followed the shore of that vast and treacherous inland sea to Grand Portage (or after 1803 to Fort William) some 450 wave-lashed miles to the west. They would normally arrive at the "Lakehead" in late June or early July, after being on the "Highway" for about two months.

Meanwhile, the Athabasca brigade would have left Fort Chipewyan with a cargo of furs immediately after break-up, which occurred



On rocky, gear-strewn shore of French River, the author points out to turbulent Parisian Rapids where divers Don Hughson (L.) and Jim Sheppard (R.) will work

Jim Sheppard discovers cache of musket balls and shot lost more than 150 years ago when trade canoe upset in French River's Parisian Rapids



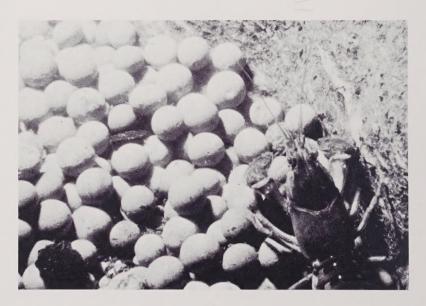
somewhat later than at Montreal because of the higher northern latitude. The Athabasca brigade, by and large, was following smaller bodies of water than was the Montreal brigade. As a result, they used a smaller craft, the "North" canoe. This was paddled by six to eight men and carried about half the load of the "Montreal" canoe—about  $1\frac{1}{2}$  tons. The two brigades would meet at the "Lakehead", exchange loads, and start on the homeward journey.

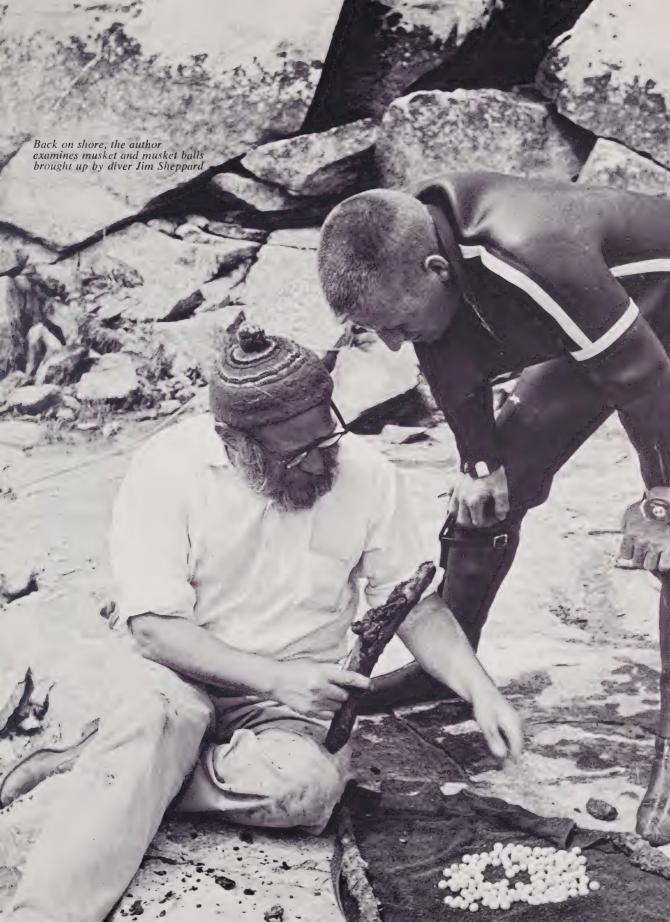
This is of necessity an oversimplification, but it does present at least a rough outline of the geography and logistics of the Montreal fur trade. It also points up the pressure that the canoe brigades were under. If they were to move the European manufactured goods from the St. Lawrence to the distant outposts in the Athabasca country, and the winter catch of furs back to Montreal in the short northern summer, they were forced to work long days whenever the weather permitted. Sixteen and eighteen hour days were not at all unusual, particularly if they were behind schedule. The necessity of keeping the brigades moving certainly influenced the opinion of the voyageurs when they reached the head of a rapid. Should they shoot it or portage around it? If they decided that a

portage was necessary, the canoe had to be unloaded, and the cargo as well as the canoe itself carried overland to the foot of the rapids. This was a slow, back-breaking process, even for the wiry French-Canadians who were professional canoeists and packers. The prospect of having to carry two 90 lb. bales on the back of one's neck is a most persuasive argument in favour of shooting a rapid rather than portaging around it.

Whatever their reasoning may have been, the Montreal fur-traders did take risks with fast water. Most of these were probably calculated risks, but they led, in any event, to accidents. The hazards of shooting rapids, of course, are sharp rocks which would tear the bottom out of a frail and overloaded birch-bark canoe, and turbulence or standing waves which would swamp it. When a canoeing accident occurred, the voyageurs would naturally salvage the lighter bales, which would float. But they had neither the time nor the equipment to retrieve heavier packages, such as boxes of axe-heads, files and muskets, bags of shot and musket-balls or nests of copper kettles. These went straight to the bottom where they would be swept along until they were deposited in a crevice or in a

Forty-seven feet below surface of French River, maternal crayfish guards nest of musket balls





quiet eddy at the foot of the fast water. And there they would remain. Or would they?

In the summer of 1960, Dr. E. W. Davis, a mining engineer from Minnesota, decided to

search for some of the trade-goods that had been lost in the rapids of the Granite River. With three scuba-divers—Dennis Dalon, Curtis Anderson and Donald Franklin—he quickly

Underwater archaeologists recovered this assortment of voyageurs' equipment from French River



located a nest of 17 graduated copper kettles. He donated them to the Minnesota Historical Society which immediately fielded a party to carry on the search. Under the direction of Robert C. Wheeler, Associate Director of the Society, the party soon added an imposing assortment of flintlock muskets, iron axes, chisels and spears, musket balls, buttons, thimbles, knives, etc. to the original find. Here was a veritable mine of information on those manufactured items which were the currency of the fur-trade.

But the work also raised a delicate legal and moral point. The Granite River is part of the Voyageurs' Highway, which marks the international boundary between the State of Minnesota and the Province of Ontario. As this early "highway" lacked the central white line which is characteristic of more modern highways, the divers had no way of knowing whether they were bringing up American or Canadian historic objects! "Bob" Wheeler solved the problem by proposing that a joint project be set up to search the border waters from Lake Superior to Lake of the Woods. He contacted Mr. Easton Kelsev of the Ouetico Foundation and Dr. A. D. Tushingham of the Royal Ontario Museum. Out of these initial contacts emerged the Quetico Superior Underwater Research Project.

From its inception, the Ontario Department of Lands and Forests has also been an active member of the group. In fact, before its actual formation, John Macfie of the Parry Sound office read a newspaper account of the discoveries on the Granite River. Realizing that in their journey to the West, all of the canoe brigades followed the French River, he decided to act. From the Sudbury office of Lands and Forests he recruited two expert canoeists and divers—Jim Sheppard and Don Hughson—to explore Double and Parisienne Rapids. His effort, like that of Davis, was immediately and spectacularly successful. He soon had a vast assortment of trade-goods spread out on the flat rocks at the edge of the rapids.

My own initiation into the mysteries and complexities of underwater archaeology occurred the next spring when I searched the Loon and Namakan Rivers, west of Quetico Park, with the late Ario Gatti. In retrospect, ours was a primitive operation. We travelled in an 18-foot canvas covered canoe, powered by a 5½ horsepower outboard motor. It was not an imposing vessel, but it would carry Ario, a guide, and myself, together with the diving gear, a small portable air-compressor, food, a tent, three cameras, a Coleman stove, gas cans, three sleeping bags, dishes, cooking utensils and personal gear. As all the gear, and the canoe itself, had to be carried over every portage, we soon developed a profound respect for the voyageurs. To carry even a light, 50 or 60 lb. pack over a soggy, mosquito-infested portage, on a hot, humid day is a vividly didactic experience.

So far, we have used the canoe to reach only about half of the places where we have worked. Most of the others could be reached in larger boats because no portages were involved. And on occasion, we have used small aircraft on floats to get into some of the more remote spots. The problem, however, is always the same: to assemble a group of divers and a mountainous heap of gear at the nearest point that can be reached by car or truck, move the party to the dive-site, do the job and get out. Over the past few years, our "heap of gear" has reached alarming proportions. This, in turn, has increased our logistic problems but has made the actual underwater search both simpler and more thorough. We now have underwater, closed-circuit television, powerful underwater lights, portable generators, a number of outboard motors, an air-lift, an assortment of underwater cameras, four 17-foot aluminum canoes and folding platforms for converting them into two catamarans.\* The catamarans were first used on the Basswood River last fall and provided a remarkably buoyant and stable diving platform.

But no amount of sophisticated equipment can make the actual diving less arduous. In the rapids, the water is swift, turbulent and murky. Although we have explored pools that were over 60 feet deep, most of the work is done in depths that vary between 12 and 40 feet, and under conditions in which visibility is measured

Clay pipes, bottles and other items found on bottom of Ottawa River where voyageur canoe sank in late 18th century. All the bottles were empty



in inches rather than feet. Turbulence and current, however, present the main problem. Powerful lights can illuminate at least a small area in even the murkiest water, but there is no defence against the constant, tearing pressure of a swift, violent current. This the diver must fight with the strength, skill and determination that are standard equipment on all trained scuba-divers. (Most divers are equipped, also, with a ferocious appetite and a gentle disposition, but these features are optional.) With practice, he learns to ride eddies and backcurrents to conserve his energy. But in the worst rapids, he must fight his way upstream by hanging onto rocks and crevices, crawling along the bottom like some pre-historic monster that spews forth air-bubbles instead of fire.

So far, important finds have been made in the Granite, Basswood, French, Ottawa and Winnipeg Rivers. The earliest material in our collections is that from the French River, and probably dates from the first half of the 18th century. The most recent material is that from the Ottawa River, dating about 1840-1870. Unlike the other finds, this material was not lost from an upset canoe; it is refuse—broken bottles, crockery and kaolin pipes—that was thrown into the river from a small trading-post on shore. The only find that can be dated precisely is from Boundary Falls on the Winnipeg River near the Manitoba border. On August 9, 1800, according to records, one of the canoes of Alexander Henry upset in the north channel. We located all the material from it—except the brandy.

\*Most of this equipment was purchased by the Minnesota Historical Society through a grant from the Hill Foundation.



Walter A. Kenyon, who wrote Our Submerged Archives, is one of the Museum's bestknown personalities. He has appeared many times on television and his portrait by Yousef Karsh appeared in an Ontario government advertisement designed to attract U.S. tourists to the province. Since he joined the ROM in 1956, Dr. Kenyon's archaeological research has taken him from the barrenlands west of Hudson Bay to the West Indies and Central America. However, his special interest is the pre-history and early history of Ontario through its 30,000 years of human habitation. He is the author of several works about his explorations, the latest being The Miller Site, published by the ROM in 1968. On his field trips he often is accompanied by his two young daughters and his wife, Eva, who cooks for the crews—sometimes as many as 50 people. Dr. Kenyon received his B.A. from the University of British Columbia and his M.A. and Ph.D. from the University of Toronto.



## Now, about the birds

## by Jon C. Barlow

Curator, Ornithology Department

Many of Canada's leading bird artists and illustrators depend upon it. Educational television explores it. Professional ornithologists and naturalists from many parts of Canada and the world use it for reference. Amateur bird watchers drop in to check identifications.

It is the Royal Ontario Museum's Ornithology Department collection of 115,000 specimens—skins, sets of eggs, and preserved birds for anatomical study. The collection is the largest in Canada and in the Commonwealth second only to the British Museum's astounding





Early morning in northern Texas and members of ROM Ornithology Department field party are hard at work preparing specimens

Represented in the ROM collection are all the living orders and families of birds and probably 70 per cent of the species in the world. Despite its size, the collection is equivalent to only a minute fraction of the billions of birds on earth at any given time. It has been assembled over 60 years through donations, bequests, exchanges and purchases as well as through staff field work. In contrast to the slow accumulation by the Museum, natural destruction of bird life can be swift. Not so long ago, in the southeastern United States, migrating birds chose a route over a television relay tower. In two nights, more birds than the Museum has specimens struck the tower and were killed.

Many purposes are served by the Ornithology Department. One is that of a biological archives. Here may be found specimens of such extinct species as the Great Auk, Passenger Pigeon, Carolina Parakeet, the Huia of New Zealand and the New Zealand quail. Other specimens supply historical distributional information for Ontario. An example is the Peregrine Falcon, a species highly susceptible to pesticides, which has been eliminated as a breeding bird in the province.

One of the Department's primary aims is the identification and analysis of evidence of evolutionary change in birds. The most obvious indications of such change are variations in measurements of wing, tail, bill, foot lengths and plumage colour among populations of the same species from different geographical locations. These changes are interpreted by the researcher as a response to local environmental conditions.

Unfortunately, despite great care, specimens fade and shrink with age. Sex, age and the season of collection also introduce variation in birds so that often the Department finds itself

with samples too small for statistical analysis. For these reasons the Department needs a large series of each species from various locations in order to select comparable specimens.

The Ornithology Department's activities in the laboratory are augmented by studies in the field where collecting activities are governed by stringent provincial and federal laws. Scientific permits carefully regulate the number of specimens, kinds of birds, and the regions where they may be taken. These permits are in the possession of Department field men wherever they operate, and must be shown upon request to wildlife personnel or federal, provincial or local law enforcement officers. As a matter of courtesy, when working in the field we inform local officials of our presence and plan of operation, thus saving them the trouble of investigating reports of our activities from the well-meaning public.

By the international migratory bird treaties of 1918 and 1937, laws governing scientific collecting activities are generally similar in Canada, the United States and Mexico. When we take birds in the U.S. we must obtain an export permit from the U.S. government, in order to

transport the specimens across the international boundary into Canada.

Collecting and subsequent possession of birds are considered privileges granted expressly for scientific research. But collecting north of the Rio Grande is no longer conducted on a large scale. The avifauna of North America is well-known, and conservation-minded scientists concentrate on specific species which they have under study. They take a limited number of other forms only to document distribution or to fill in gaps in anatomical collections. In our own case, our current research interests and field activities are concentrated on variation in Brewer's Blackbirds, House Finches, several kinds of jays and the North American vireos.

As mentioned, differences in size and colour among samples of birds from various localities reflect evolution in response to local environmental factors. To recognize such morphological differences, generations of ornithologists have used personal observations and simple measurements as their stock-in-trade while they pored over long rows of skins housed in seemingly endless drawers. In recent years, however, there has been a tremendous development in



Mounted specimen (l.) and tape recording of his own song lured this agitated male Philadelphia Vireo (r.) to branch

techniques and equipment available for evaluating important physical and behavioural characteristics of birds and for gathering data in the field and laboratory. The ROM is now among a very select group of museums with the most modern equipment for such studies. Most items have been purchased with Departmental funds and with research grants from the National Research Council of Canada, the Ontario Department of University Affairs and the Canadian National Sportsmen's Show.

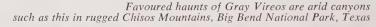
At present one of our major research projects involves cataloguing in the field the aggressive and courtship behaviour of various species of North American vireos (song bird family Vireonidae). The field studies are being undertaken in British Honduras, northern Mexico, western Texas and central Ontario. We have learned much about the ecology and distribution of vireos. We also have discovered that species that look alike don't always behave alike.

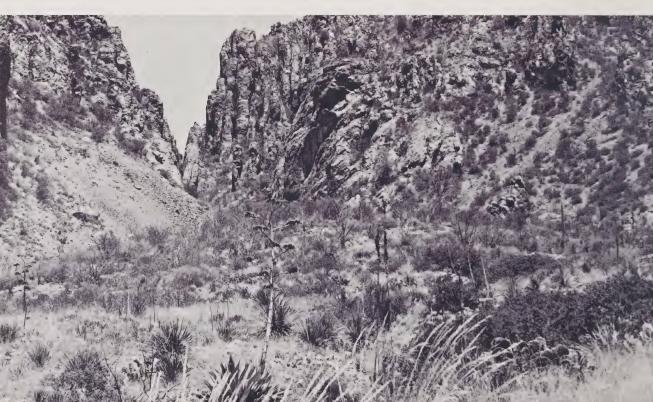
In earlier times hand-written notes were the

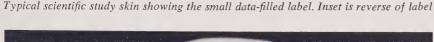
only record of birds' behaviour in the field. Now we augment our notes by slow-motion 16 mm. films of displays and other behavioural patterns, making accurate studies in the laboratory much easier. Through repeated viewing of these movies, it is possible to gain far greater insight into the origin and function of individual displays.

To aid filming we often set mounted specimens near nests to evoke displays from agitated adult birds. Thus we can set the stage as far as light, vegetation and visibility of the birds under study are concerned. Stationing oneself near the nest to record behaviour might sound like a pretty good idea but a nest must first be found—and this is not always easy. With vireos, it is best to begin on the breeding grounds in midspring, then locate and follow a pair of birds involved in nest construction.

The Gray Vireo, which I have been studying in the south-western United States, poses special problems, for it lives on hot, dry, boulder-









strewn mountain slopes covered with cactus and other thorny plants, all dedicated to the discomfort of the field man. To further complicate matters, the Gray Vireo ranges over a 10- to 20-acre territory; the closely related (and more obliging) vireos of Ontario's forests prefer one to three acres of territory.

Luck plays a large part in field work. In 1966 I spent three weeks searching slopes and canyons in the Chisos Mountains of west Texas. Although I found several Gray Vireos, I failed to locate any nests. In 1967, in the same region, my assistants and I found a nest within an hour of beginning our first real search. Then, at the end of our 1967 field work, much battered from long hikes over very rough terrain carrying 40 to 50 pounds of equipment per man, we left the Chisos to visit friends in Las Cruces, New Mexico. They took us to a spot in the

Organ Mountains. There, almost unbelievably, we were able to drive within 100 feet of a pair of Gray Vireos, and we were able to walk across level pasture right up to the grove of low oaks in which they were nesting.

Behavioural displays are accompanied by distinctive vocalizations which we tape with a high fidelity recorder, using a special microphone fitted to a parabolic reflector that focusses the sound. Such tapes can be played back to individual birds, evoking further recordable behaviour, and then all tapes are analyzed in the laboratory. Tape recorders are also used for note taking in the field, greatly increasing the speed and efficiency of this laborious operation.

Once back in the Museum, specialized equipment for data gathering and analysis assumes even greater importance. Measurements of

Sona-graph, here operated by Ross James, provides visual record of bird song. Frequency range (up to 10,000 kilocycles) is recorded on vertical axis while horizontal axis shows duration



birds are taken with precision dial and Vernier calipers. Colour differences in plumage are examined with a spectrophotometer, a piece of equipment more commonly found in a chemist's laboratory. It produces a graph depicting the amount of light which is reflected by feathers. This gives us colour in percentage terms, which can be analyzed statistically, eliminating arbitrary judgments based on personal vision and verbal description—both notoriously untrust-worthy!

To facilitate meaningful analysis of large quantities of numerical data, Dr. Dennis Power of the Ornithology Department has written a series of programs for use on the IBM 7094 II computer housed at the University of Toronto. An IBM keypunch has been rented by the

Ornithology, Mineralogy and Geology Departments and is housed in our Department. It expedites the processing of data and reduces the number of trips which must be made to the University's computer centre.

The movies taken in the field are analyzed with a time-and-motion study projector that enables us to review slow-motion film (64 frames per second) at still slower speeds. Responses to the same kinds of stimuli by different kinds of birds can be analyzed movement by movement. Similarities and differences help reveal evolutionary relationships among the species under study.

Taped vocalizations are analyzed with a Kay Electric Sona-Graph. This produces a permanent visual record of sounds. Sonagrams, as they are called, show the length and frequency of songs and calls and enable us to compare their characteristics among species, just as we can compare size, shape, and colour of birds. More specifically, vocalizations of different species in the same situation (for example, while protecting the nest or young) may be compared. We can also study song as it changes during the different stages in the life cycle of a particular bird.

For studies of muscles and bones, we have acquired precision binocular dissecting and oil immersion scopes. Then there is a micro-dissection kit of extra-small scalpels, scissors, probes, bone cutters and forceps, enabling comparison of the most delicate of bird organs and tissues.

In the past, curators of bird collections were fortunate if labels on specimens bore information concerning the locality, sex, and date of collection. Today, in addition to such data, information on reproductive conditions, weight, degree of skull ossification as a reflection of age

(in song birds), colour of soft parts, amount of body fat, stomach and crop contents (giving insight into food habits), presence of parasites (externally and internally), evidence of disease or anomalies, evidence of moult, habitat preference, the bird's activities when it was obtained and the time of day of sacrifice (this datum affects body weight) all are listed. All this detailed and highly accurate information can be written in a conventional notation system on a label only three inches long and less than an inch wide.

Since 1966 the world-wide interests of the ROM Ornithological Department have resulted in forays into Iran, British Honduras, northern Mexico, and the western United States. In the future we hope to expand our field activities in Central America, the Caribbean and northern South America.

Unfortunately, the fruits of all this research cannot now be shown to the public. That must wait until the ROM obtains additional space for new display galleries.



Now, About The Birds provides an impression of the activities of the Ornithology Department and its curator, Jon C. Barlow. Dr. Barlow, who holds a cross-appointment as Assistant Professor of Zoology at the University of Toronto, was born at Jacksonville, Ill. He received his B.A. from Knox College, Galesburg, Ill., and his M.A. and Ph.D. from the University of Kansas. Following service as an officer with the United States Army, he was a member of the American Museum of Natural History's expedition to Uruguay in 1963 to obtain mammals and their ectoparasites. During the 1964-65 academic year Dr. Barlow was Assistant Professor of Biology at Rockhurst College in Kansas City, Missouri. In 1965 he joined the ROM and his recent field work has taken him to Texas, Mexico and Arizona. Dr. Barlow is married with three children, Melinda, Amy and Timothy.



Miss Sutermeister at work



General view of site

## by Helen Sutermeister

Curatorial Assistant, Canadiana Department

Most people go to Normandale to swim and fish. Last summer, however, there was an extra tourist attraction at the small Ontario town on the shores of lake Erie. The lines of cars moving toward the beach often slowed to a halt as their occupants watched strange activities by the side of a dusty road. Young people, mostly students, were busy shovelling dirt out of square holes or parading among the trees with striped measuring poles. They were not establishing a Hippie camp; they were engaged in a new field of research for the Royal Ontario Museum—Industrial Archaeology.

To most people, archaeology is concerned with ancient and long-forgotten civilizations while industry is the focus of our modern culture. "Industrial archaeology" may seem like a contradiction in terms. However, the beginning of industry is important in Canadian history and soon forgotten in a fast-developing country such as ours. Under severe northern winters, deserted buildings quickly crumble and in pioneer communities documentation is rarely complete. Excavation may be the only way of recovering any knowledge of how early Canadian industry operated.

HE Subscribers are now receiving 1000 STOVES

From the Foundry of Joseph Van Norman, of Normandale, Long Point, Upper Canada, consisting of

20 Inch.

22 do.

do.

do.

33 do.

40 do.

Plate Stoves-elegant patterns

OVAL STOVES-double plate. Also-All sizes of the very justly celebrated VAN NORMAN COOKING STOVE, Which for simplicity of construction, economy in fuel, and really good oven, cannot be excelled, if equalled, by any other Stove in the Market.

> Dog Irons, Bake Pans, Belly Pots. Spiders, &c. &c.

which will be offered to the trade on very advantageous terms.

CHAMPION, BROTHERS, & Co.

Wholesale Hardware Merchants. 22 Yonge Street, Sept. 1837.

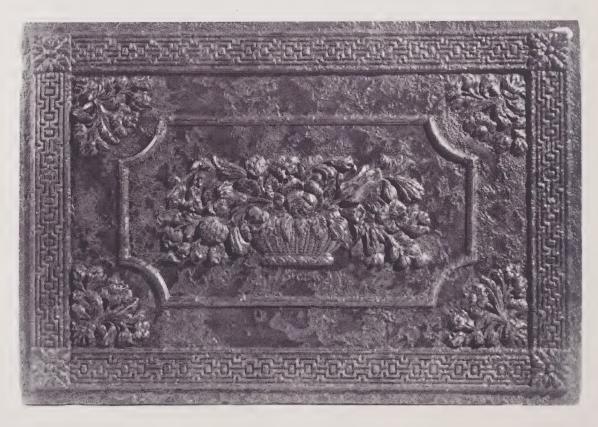
Such a case is Normandale, a tiny settlement on Lake Erie near Long Point where the first iron foundry in Upper Canada was established. From 1841 to 1867, southern Ontario was referred to simply as "Canada West".

The history of the foundry is a romantic tale of courage, heartbreak and ultimate success. An English ironfounder named Mason, an early immigrant to the area, recognized the potential for a successful iron smelting industry: ready supplies of bog ore and a steady market among the local settlers. Fortunes had been made under similar conditions by the foundries of New England. But Mason ran into grave difficulties; he was unable to find suitable building stone or skilled workmen and he had no knowledge of how to smelt the local ore. In 1817, after years of virtually single-handed work, he completed the first blast furnace but it broke open after only one firing.

The unhappy ironfounder died soon after, of a broken heart, so they said. His widow sold out to a syndicate of New York State foundry owners led by the Van Norman brothers, who gave their name to the village. They profited from Mason's mistakes, from their own superior capital resources and from their knowledge of North American conditions. The foundry flourished, becoming a large supplier of stoves as well as building hardware and perhaps agricultural implements. It spawned similar iron works all over southern Ontario. When it closed in 1850 at least six others were working in the district.

The bog ore used in the foundry was a natural deposit found in the ponds and swamps of the area. It was obtained free under a Crown patent and charcoal was used for the smelting

Stove plate with floral design



fuel, thus giving local farmers an outlet for the timber felled in clearing their land. At its peak, the foundry employed over 100 men in full or part-time work and kept two schooners fully occupied shipping the products as far as Chicago and Quebec. One Montreal merchant advertised the receipt of no less than one thousand stoves from Normandale.

By 1968, not a trace remained above ground of the building complex that once housed this industry and little was known about the methods they used. The aim of the ROM excavation was the study of the technology from evidence now underground.

The first stage involved some preliminary sleuthing of the terrain in November, 1967. No blast furnace can run without bellows and the motive power to work them. We easily identified the diversion stream and the site of the water wheel and found that the surrounding ground was littered with lumps of iron slag. The most probable site for the furnace, then, was the foot of the slope beside the waterfall. The hill, we felt, would facilitate the loading of ore and charcoal into the top of the furnace.

It was a wet and depressing spot in late November. The half-frozen stream dribbled onto a pile of rotting leaves. The village itself was almost deserted; empty summer cottages had replaced houses which the ironmasters had built for their workers. The only visible reminder of Normandale's past prosperity was an elegant but dilapidated hotel and Joseph Van Norman's house, built in the style of his Hudson Valley home.

When we returned in June, Normandale had changed character completely. The area now swarmed with hopeful contestants in the Bass Fishing Derby. The arrival of a few tents full of diggers passed without too much notice.

Our excavations, the largest yet undertaken by the Canadiana Department, were financed by a generous grant from the Steel Company of Canada which traditionally has been interested in the early history of the industry. We also received invaluable help from local officials of the Ontario Department of Lands and Forests who lent us their facilities and equipment and advised us in times of trouble.

The site presented difficulties since the vegetation resembled tropical jungle rather than northern forest. The first stage of excavation was conducted with grass whips and a power saw. After a few days of digging, it became clear that the furnace lay not at the foot of the hill as expected, but on the slope. Excavation at an incline of 30° involves more than the usual chance of slipping backwards into a hole or being felled by a runaway wheelbarrow. To make matters worse the entire hill turned out to be artificial—a huge sand heap retained by a plank wall which ran around the back of the furnace. Though easy to dig through, the sand was very unstable and continually threatened to collapse, making it almost impossible to maintain the straight trench edges which every archaeologist likes to see on his site.

Problems increased as we began clearing the furnace area itself: the holes were deep and the upper parts of the furnace masonry had been largely demolished, leaving loose stones of immense size. After much futile struggling we appealed to the Lands and Forests Department who came to our rescue with an A-frame and



Small cast iron figure of a horseman, probably intended as decorative motif for stove front

pulley which effortlessly lifted out the largest rocks.

Mechanization, however, was not always successful. The bulldozer imported to fill in some of the trenches incautiously approached the site over the stream bed and stuck there. It was agonizing to watch this enormous machine struggling in the mud at the rate of ten dollars an hour of excavation money.

None of our volunteer diggers had any previous excavating experience but they soon picked up the techniques. Work began at eight in the morning and the first task was to bail out the animals—mainly field mice and young rabbits—who had fallen into the trenches in the course of the night. About ten o'clock the stream of visitors began. In addition to newspaper reporters and television crews the dig attracted attention from other archaeologists and metallurgists. One reporter-like visitor, bearing the usual notebook, turned out to be the local building inspector. He informed us that after 21 days our tents underwent a legal metamorphosis into buildings requiring a permit.

Of course the dig created much local interest. People brought in objects manufactured by the foundry and volunteered a great deal of useful information. Some local traditions, however, must be taken with a pinch of salt. One visitor tried to persuade us that she knew an old carter who had delivered stoves from Normandale. "Of course," she said, "he was very young in those days." Since the factory stopped production before 1850 we calculated that, even if he had been working as an infant in arms, the man must now be 120 years old.

Between visitors, digging progressed steadily. At the early stages the site was laid out in square trenches so that the stratification could be recorded from the trench sides and earth samples taken. Gradually the pattern of the furnace foundations began to emerge across the various holes, and the standing earth sections were then demolished to lay bare the whole structure.

It was not the type of furnace we had expected. At a date when the foundries of New England or Europe built neat, square, blast furnaces with one large opening, Normandale

used an eccentric structure shaped like an arrow head. It probably stood 20 to 30 feet high and had two openings, one containing the bellows and the other drawing off the molten metal for casting. The masonry was crude and the whole structure was quite small, measuring six to seven feet across the interior of the stack.

Most of the factory's products were made by pouring molten metal through a funnel into carefully prepared sand moulds. When the form hardened the "spew" from the funnel was broken off and the rough edge filed smooth. Casting was a tricky process and mistakes were common. We found articles in which the metal had overflowed the mould, stuck to the sand bed or developed air bubbles. Of course, our finds represent only a small proportion of discarded pieces. In most cases, the object would be remelted for a second attempt.

The furnace was too weak to last long, for the stonework was rough and unmortared. Some accident of the firing induced the ironmaster to abandon it for a new one and the masonry of the stack was deliberately demolished and probably reused. Where was this next furnace? Our trenches failed to locate it in the area avail-

View of furnace foundations from the bellows opening. Timber struts prop up a wall with an ominous lean



able for exploration. We assume that it probably lies upstream from the first one, under modern buildings.

The furnace, however, was only part of our work. The metal objects found in digging were equally important in acquiring knowledge of the foundry's production methods. Much of the material was quite meaningless, mere scraps of rusty metal, but all finds were brought in at the end of the day and catalogued with their measurements, date of discovery, trench and stratum. The most promising pieces were chipped free of rust and cleaned for several days in a solution of sodium hydroxide. Under this treatment the most anonymous hunks of metal often were transformed into something worthwhile. If we withstood the temptation to remove a piece from the brew before it was properly "cooked", unsuspected writing or decoration often emerged.

The finds included hardware from the buildings, innumerable nails, agricultural tools and many examples of highly decorated stove plates for which the foundry has always been famous.

Perhaps most interesting were the casting tools: hooks for moving the hot iron, scrapers for making moulds, pouring bowls, chisels and files. Evidently the foundry was not capable of producing the more delicate tools for itself; the files are stamped with the name of an English firm.

The problems of excavating an iron foundry are not confined to the field. Once the last stone has been drawn to scale and the last nail catalogued, all the records and finds are transported back to the Museum for drawing, photography and analysis. What do we do now with objects too large to be cleaned of rust at the site? The ROM Conservation Department has little space, resources or staff to treat a pile of stove plates or a length of railway track, and the back steps of the Sigmund Samuel Canadiana Building are still loaded with rusty iron.

A publication on the excavation and the findings is being prepared. When it is completed, the Royal Ontario Museum will have made some small contribution to the documentation of Canada's history and the beginnings of its flourishing industrial economy.



Helen Sutermeister, who describes her work in Normandale: Canada West, was born in Wales. While a student she became interested in archaeology and took part in a variety of excavations in Britain. After receiving her M.A. in Modern History from Oxford, Miss Sutermeister joined the Ashmolean Museum as a field officer for a time. In 1966 she came to Canada and spent two seasons as Staff Archaeologist at the federal project to restore the 18th century French fortress at Louisbourg, in Nova Scotia. Results of her work there were published in the British journal, Post Medieval Archaeology. Miss Sutermeister joined the ROM in 1967 and since has been exploring traces of early industry in Ontario while retaining an interest in the French period of Canadian history.

# a vanishing people

## by Helmuth Fuchs

Associate Curator Ethnology Department

South America is one of the last refuges of true tribal communities who have not yet completely lost their cultural identity, their value systems and symbolisms.

But they are vanishing before their cultures have been adequately studied. Recent estimates of unassimilated tribal Indians in lowland South America are alarming: only about 40,000 are left in Brazil, 100,000 in Colombia, 900 in French Guiana, 2,000 in Surinam, 2,000 in Guyana, 10,000 in Paraguay, and perhaps 30,000 in Venezuela. Once these tribes have disappeared there will be no way to examine the variety within their material culture, not to speak of the many traditions of economic, social and ideological order. For one reason or another, sufficient data and specimens have not been collected.

The shaved forehead, still to be seen on some individuals, pierced earlobes and

lower lips, plucked-out eyebrows and eyelashes are part of the make-up

Photographs by R. Thomson.





In this race against time, the Royal Ontario Museum has given priority to the study of vanishing cultures in general and those in South America particularly. This work is under the direction of the author.

In late 1967 the ROM acquired a small collection typical of the Guajiro (Wayú) Indians of Venezuela and Colombia. Now it has obtained more than 200 specimens from the Mbengo-krē (Kayapó) Indians of the Xingú National Park, State of Mato Grosso, Brazil.

Living in a single village, 600 miles northwest of Brasilia, the Mbengo-krē number about 150-200 persons. Their community is directed by a chief whose authority is limited by a council. They live by garden-farming, collecting wild fruits, hunting and fishing. Their village is arranged in an enlarged semi-circle, according to their complicated social structure, with a bachelors' hut in the centre. Composite festivals with dances and songs, initiation ceremonies, feasts of the dead, the Great Anteater masquerades, and name-giving ceremonies indicate the variety and depth of their spiritual creativeness.

Return from successful hunt. Exchange of original body decoration for cotton shorts is generally the first sign of transculturation



Babies are carried in a sling, resting on mother's hip



The discoid lip-plug and elaborate body-painting in black and red contrast with the complete nakedness of both sexes

The collection of specimens obtained from the Mbengo-kre includes 27 gorgeous feather head-dresses, complete sets of ear-plugs, lip plugs, wristlets and bracelets, necklaces, combs, slings, sleeping mats, sashes and a penis sheath, different types of bows and arrows, a spear, round club and sword club, manioc presses, gourds, a spindle and wooden pipes. Also included were a set of photographs, several of them reproduced here, colour slides, and taperecordings of their songs. The photographs

show how the specimens were worn or used.

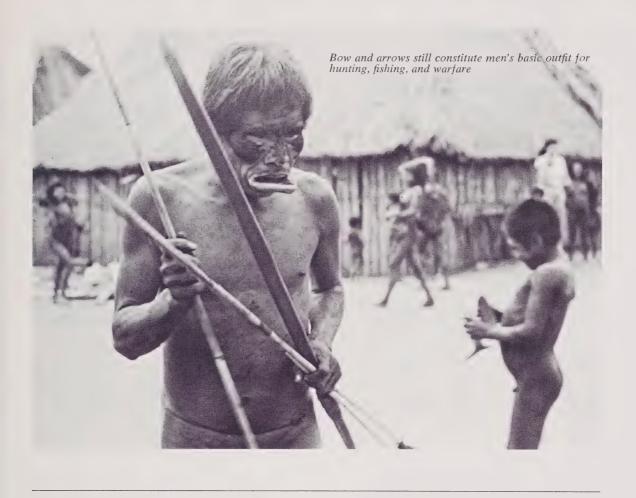
Brief though this note is, it provides a glimpse of a vanishing culture, and complements the major exhibition, "Arts of Forgotten Peoples," at the ROM April 22-June 22. Meanwhile there are plans to show these and other new acquisitions of the Ethnology Department in a temporary exhibit area in the Ethnology galleries. A display of the Guajiro collection will appear from April to June, followed by the Mbengo-kre collection from June to October.

The feather head-ruff, normally worn by men in ceremonies, is here worn by a child, possibly during a name-giving ceremony

The Great Anteater masquerade is organized in turn by the men's associations. The costumes are made by two men, chosen from each association







Helmuth Fuchs received his Ph.D. in Ethnology and Prehistory from the University of Vienna (Austria) in 1956. From 1957 to 1967 he was Chief of the Department of Ethnology and Archaeology at the Museo de Ciencias Naturals in Caracas, where he did extensive fieldwork among the Indians of Venezuela. From 1965 to 1967 he taught at George Washington University, Washington, D.C., as Visiting Professor. He joined the ROM in late 1967 to start research programs in South America, mainly in the Amazon-Orinoco Basins shared by Brazil, Bolivia, Peru, Colombia, Guyana, Surinam, French Guiana, and Venezuela.



## The Growing Collections

The Far Eastern Department has strengthened its collections by the purchase of two paintings. The "Record of the Bamboo Hall at the Yellow Gorge," an album leaf with accompanying colophon mounted as a hanging scroll, in ink and slight colour on paper, is by Ch'ien Tu (1763-1844). The painter dated this work to 1828. Though modest in size, the landscape demonstrates the suavity with which later Ch'ing Dynasty artists could assimilate both orthodox and non-conformist styles. Ch'ien himself, equally famous for calligraphy, poetry and critical writings on art, was a supreme exponent of the classical literati tradition.

A second album leaf of grapes, executed in ink and light colours on paper, bears a seal giving the name Li Ch'in. An early 17th century text identifies Li Ch'in as a Japanese who had travelled to Ming Dynasty China, and the grape painting was published in an 18th century collection. Stylistic clues, however, suggest its placement in Korea c. late 16th century.





A magnificent specimen of native silver from the Cobalt district of Ontario has been loaned to the Museum by Mr. James P. Arnott, President of Glen Lake Silver Mines Limited. Mr. Louis Cadesky helped bring the specimen to the attention of the Mineralogy Department. The silver weighs 71 pounds and is 19" long, 14" wide and about 2½" thick. Thin plates of silver, interleaved along joint planes in a fine-grained greenstone, create a most attractive effect. The specimen is on display in a special case in the ROM Gallery of Mineralogy.



One of the prizes of the ROM's 1968 expedition to Western Canada was a skull and mandible of the giant pig *Entelodon coarctatus*. This is one of the most perfectly preserved specimens of this animal, and was collected with the help of high-school seniors employed by the Vertebrate Palaeontology Department. The pig is from the Cypress Hills formation, Oligocene Age, about 40 million years old. As a result of several expeditions to the Cypress Hills of Saskatchewan, the ROM now has an extensive and varied collection of Oligocene vertebrates.





Recently acquired by the European Department for its modest yet growing collection of Art Nouveau is a lamp made in Paris during the 1890's, after a model by Ernest-Justin Ferrand, and entitled "Coup de Vent." By entering the field of industrial design, the Art Nouveau movement hoped to transform every object of daily life into decoration. This small lamp with its electrical bloom is a good example of this tendency. The sinuous curving line of the tulip, the nymph's flowing hair and clinging veil-like garment are all very much in period. The dancing nymph motif exemplifies fascination with movement, life and its sources. Yet despite the lightness and gaiety of the figure, the looming plant enshrining and almost enclosing her seems somehow ominous.

A man's cape, the gift of Mrs. Edgar J. Stone to the Textiles Department, reflects the magnificence of Spain a generation before the Spanish Armada. It is of crimson satin damask with bands of applied work in yellow silk and couched silver thread. The damask, said to have been woven on Toledo Cathedral looms, dates from the third quarter of the 16th century.



Six antiquities from a private collection in Ottawa were recently purchased by the Egyptian Department. Each is of unusual interest in its own way. One, a shawabti figure of hard green faience, is inscribed for Ka-nefer, the son of a lady named Asetreshety. He was a priest and scribe in the Temple of Ptah who lived about 600 B.C. Shawabtis, which were buried at the funeral in sets, served as model substitutes for the deceased in the forced labour of the next world. The hieroglyphic inscription is a standard spell to cause the figure to work for its owner. In its left hand is a pick, in its right a hoe and the end of a cord with which a basket is slung over the shoulder.

The oldest by far and historically the most important of these purchases is a macehead of dolomitic limestone. It bears the double name of King Khefren, builder of the Second Pyramid at Giza, about 2600 B.C. The pear-shaped weapon, perforated axially for a wooden shaft, is badly damaged, but its identifying inscription incised in hieroglyphic characters is almost intact. The only other known mace bearing Khefren's name is a fragment made of the same distinctive stone and found by Flinders Petrie at the main temple of the king's pyramid.





#### **ROM Publications**

Published in conjunction with the "Arts of Forgotten Peoples" Exhibition is a handbook, FORGOTTEN PEOPLES. It contains 108 pages and illustrations of 180 objects, all of which are included in the Exhibition, at the ROM April 22 to June 22. The book is much more than a catalogue; it is a guide to the Ethnology Department's splendid collections of North American, South American, African and Pacific Oceania material. The handbook also compares the household utensils, homes, weapons, hunting and agricultural techniques and supernatural aspects of these indigenous cultures. During the exhibition, this handbook contains a printed catalogue of the over 500 items in the show. FORGOTTEN PEOPLES, paperbound, \$3.00.

Still in the field of Ethnology is the publication of the first ROM CHART. Measuring 39 by 32 inches, the full-colour chart explains and illustrates applications of the basic art designs of the Naskapi Indians of Northern Quebec and Labrador. The illustrations of wearing apparel and other objects decorated by the Indians are photographed in such a way that the designs are clear and easily followed by those who may wish to copy them. The Naskapi ROM CHART is the first of a planned series of charts on the basic art designs of all of Canada's major Indian groups. Later charts may be issued on the designs of pioneer Canada, ancient China and Greece. ROM CHART NAS-KAPI, \$3.00 (available folded in envelope or unfolded).

Two more guides to aspects of the ROM collections are to appear shortly. One is on the Chinese frescoes in the main floor area long

known as the Fresco Gallery, shortly to be dedicated to the memory of Bishop White (see *Spotlight* section). Proceeds from the guide, containing 20 pages and 11 illustrations, will go to the Bishop White Memorial Fund.

The second guide soon to be published is on the East Asian Galleries. With 32 pages and 81 illustrations, the guide will enable visitors to more fully enjoy the Museum's extensive Chinese, Indian, Japanese and Korean Collections.

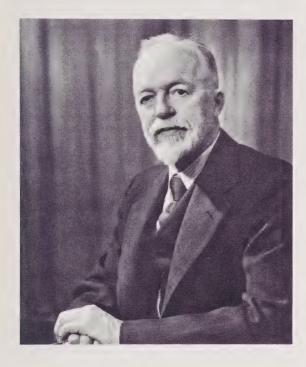
For a more comprehensive survey of the ROM Far Eastern collections, there is the handsome handbook to the FAR EASTERN COLLECTION. Written by Henry Trubner, former Curator of the Far Eastern Department, it explores, in 120 pages of text and photographs (eleven in colour) the art of the East. THE FAR EASTERN COLLECTION, hard cover, \$5.50.

Another fascinating book, recently published by a British firm, is DINNER IS SERVED, by the late Gerard Brett, retired Research Curator of the European Department (see *Tributes* section). This is an authoritative, perceptive work on the table utensils, vessels, customs and menus of Europe between 1400 and 1900. Many of the illustrations are of objects in the ROM collections.

DINNER IS SERVED should be available in the near future in North America. All other publications described now are or shortly will be available at the Museum Sales Desk.

Meanwhile, work has begun on a facsimile edition of a sketch book owned by the noted 19th century artist, Paul Kane. Exhibited only once (at the Indian Pavilion of the 1968 Canadian National Exhibition), the sketch book, now in the ROM collections, is an irreplaceable historical and artistic document. It contains 125 sketches by Kane, a number of them done while he was in Italy in 1843, the others made during his 1845 sojourn among the Indians of Western Canada. Kane's famous oil paintings are a valuable historical record of Indian life in the 1800's. But experts consider his sketches reveal the man as an artist. The facsimile of Paul Kane's sketch book is to be brought out by Charles J. Musson Publishers Limited, probably in the autumn.

## Edmund Murton Walker, 1877-1969



With the death of Professor Edmund M. Walker on February 14, 1969, the Royal Ontario Museum has lost one of its very first supporters, and for more than fifty years, one of its most active and dedicated contributors.

Professor Walker was a member of the staff of the Department of Zoology in the University of Toronto from 1906 until 1948, and head of the department for the last fourteen years of that time. During the founding and development of what was then the Royal Ontario Museum of Zoology, certain professors of the University took an active part in establishing the research collections and first exhibits. Dr. Walker's own interests lay in the systematics and morphology of invertebrate animals, especially the insects, and he guided the development of this part of the Museum's collections for many years. He also served as Assistant Director of the ROMZ from 1918 until 1931. When his increasing obliga-

tions as a professor forced him to relinquish this connection with the Museum, he was appointed honorary curator of invertebrate zoology, a position he held until his death.

The contribution made by the Walker family to the ROM is especially important because the very establishment of the institution is due, in large part, to Professor Walker's father, Sir Edmund Walker.1 This remarkable man had a wide-ranging interest in scientific and cultural affairs; among other activities he was an amateur palaeontologist. Through the prestige of his office as president of the Canadian Bank of Commerce, and as one of Canada's outstanding financiers, Sir Edmund was successful in establishing many of Canada's cultural institutions. Among these was the Royal Ontario Museum, and Sir Edmund served as the first chairman of the Museum's Board of Trustees from 1912 to 1924.

Professor Walker's research work began on the orthopteroid insects, the grasshoppers, crickets and their allies. The high point of this work was his discovery and subsequent detailed study of the remarkable "living-fossil" grylloblattid insects in the mountains around Banff, Alberta. His papers on Grylloblatta campodeiformis Walker have attracted world-wide attention in entomology. His interests shifted, however, to the Odonata, the dragonflies and damselflies, and much the larger part of his time for research was spent in collecting, studying and writing about these insects in Canada. Many of his field trips were made in company with various staff members of the ROMZ, the collections serving both for Dr. Walker's work on dragonflies and for the general study materials of the Museum.

His University lectures deftly combined his intense interest and knowledge concerning invertebrate animals with his ability to make remarkable freehand sketches of their structures, and to mimic their sounds and behaviour, too. In the tradition of Charles Darwin, he had

managed to educate himself in almost every phase of natural history. To the students, and to his very wide circle of naturalist friends, Professor Walker was one of those rare persons in whose hands "biology is greatly a science, and no less greatly a humanity".

After Dr. Walker retired as head of the Department of Zoology of the University in 1948, he took up an office in the ROM entomology department, and began to organize the results of some forty years of observation and study into a monographic work, The Odonata of Canada and Alaska. Volume 12 was published in 1953, when he was 76 years old. Five years later Volume II<sup>3</sup> appeared. He began the third and concluding volume at the age of 82, but after completing a large part of the manuscript, he was forced by illness to give up his work on it in his 86th year<sup>4</sup>. The three-volume monograph on the two hundred species of Odonata in Canada will be the most complete account of any insect group in this country. All together, he wrote over 130 scientific papers through the whole of his career.

The excellence of his published work brought Dr. Walker many honours during his life-time. For the Tenth International Congress of Entomology held in Montreal in 1956, Dr. Walker was an honorary vice-president; his *Grylloblatta campodeiformis* was the official Congress emblem. He was a Fellow of the Royal Society of Canada, and in 1960 was awarded the Society's Flavelle Medal for outstanding work in science.

When the Centennial of the Entomological Society of Canada¹ was celebrated in 1963, a special convocation of Carleton University was held at which the degree of Doctor of Science honoris causa was conferred upon him as one of Canada's most eminent entomologists.

A distinguished entomologist in his own right, Professor Walker chose to identify himself with the larger role of museums in the basic field of systematic zoology. To the Royal Ontario Museum he gave his research collection of insects, and his very extensive library. And throughout his long career he invested his own efforts in the development of the Museum, with the conviction that a good natural science museum was important to both science and society. In recognition of his many contributions, the room housing the main collection of insects in the Rom's department of Entomology and Invertebrate Zoology has been designated the Edmund M. Walker Room.

Glenn B. Wiggins

<sup>1</sup>See also, Centennial of Entomology in Canada, 1863-1963: A tribute to Edmund M. Walker. Ed. by Glenn B. Wiggins. Univ. of Toronto Press, 94 pp.

2-3-4The Odonata of Canada and Alaska. Univ. of Toronto Press. Vol. I, 292 pp., 1953; Vol. II, 318 pp., 1958; Vol. III, being completed by Dr. Philip S. Corbet.

## Gerard Brett, M.C., M.A. (Oxon.), 1915-1968

The death of Gerard Brett who had been a victim of multiple sclerosis for many years is a loss to the Royal Ontario Museum, and to the world of scholarship. Born in Northern Ireland, he received his schooling at Marlborough College in England. After graduating from Oxford in 1936, he took part for two seasons in ex-

cavations at Byzantium carried out by the Walker Trust of the University of St. Andrew's, and then, in 1938, joined the staff of the Victoria and Albert Museum as Assistant Keeper in the Textile Department. With the outbreak of war, he first joined the Royal Ulster Rifles, and then the Commandos. He took part in the

second raid on the Lofoten Islands; in 1942, he was taken prisoner in the course of the Commando raid on the German naval base at St-Nazaire which successfully destroyed the major dry-dock there, the only one on the Atlantic coast in Nazi-dominated Europe. After the war, he returned to the Textile Department of the Victoria and Albert Museum, and was also made Assistant to the Director.

In 1948, Mr. Brett was appointed Director of the Royal Ontario Museum of Archaeology, succeeding Mrs. Dorothy Burr Thompson who had filled the post for one year in an acting capacity following the retirement of Dr. C. T. Currelly, the first Director. Later the same year, he married Miss K. B. Maw, the Curator of Textiles at the Museum. In 1955, he resigned his post for reasons of health, and became Curator of the European Department of the Royal Ontario Museum. During the years in which he held these positions, he was also Associate Professor in the Fine Arts Department of the University of Toronto.

During the time that he was Director, it was Mr. Brett's policy to build up and strengthen the curatorial departments of the Museum, a development that has been of the greatest value to its welfare. He continued and expanded the practice of having special exhibitions that had



begun in the last years of Dr. Currelly's tenure of office. He planned and organized several of these including "Modern English Pottery" in 1951, "East West" in 1952 showing the impact of the Far East on European styles, and its counterpart "West East" the following year dealing with the influence of the Occident on the arts of the Orient. "Elizabethan England" was presented at the time of the Queen's coronation in 1953. Other outstanding exhibitions during this period were "Design in Scandinavia" in 1954, and "Designer-Craftsman, U.S.A." in 1955. While Curator of the European Department, he organized the important exhibition of English silver in 1958, and prepared the catalogue.

Despite strictly limited funds, he was responsible for a number of acquisitions that helped build and substantially improve the Museum's collections. It was a great regret that he was unable to assemble a Byzantine collection, his favourite field, but it is thanks to him that important pieces illustrating the decorative arts of England are now on display including silver, 17th century slipware, and 18th century furniture. His tastes were catholic, and it was through his efforts that the Museum acquired the Krenz Collection of Chinese silks and embroideries as a gift from Mrs. Sigmund Samuel.

Mr. Brett's research dealt with many varied aspects of the history of art. His first major publication was on the mosaics and small finds in *The Great Palace of the Byzantine Emperors* published by the University of St. Andrew's in 1947. In addition to other papers in the Byzantine field, and his work on silver, contributions dealt with furniture, ceramics and textiles. Some of these appeared in the Museum's *Bulletin* and *Annual*, and in *Rotunda*. *English Furniture and its Setting*, a catalogue of the ROM collection, was published in 1965. He continued working constantly despite increasing disability, and his latest book *Dinner is Served* was published in the autumn of 1968.

He was generous with his knowledge to all his colleagues, and was liked and admired by all those who had the privilege of working with him. His death is felt by all of them, as it will be by all friends of the Royal Ontario Museum.

### The Royal Ontario Museum

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